

CLAIMS

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)

6. (Previously Presented) A coil operated control valve comprising:  
a valve seat;  
a pole piece defining at least a first pole shoulder and a second pole shoulder that are both stationary relative to said valve seat;  
a coil for selectively inducing a magnetic flux in said pole piece;  
an armature moving a valve portion relative to said valve seat to control flow of a fluid through said valve seat, said armature defining at least a first armature shoulder and a second armature shoulder, said first armature shoulder cooperating with said first pole shoulder to define a first lateral flux gap and said second armature shoulder cooperating with said second pole shoulder to define a second lateral flux gap; and  
a closed tube structure formed by a sleeve wherein said sleeve forms a pressure boundary about the armature, and the armature is disposed within said sleeve, and said coil is disposed outside said sleeve.

7. (Original) The control valve defined in Claim 6 wherein said pole piece is fixed relative to said valve seat.

8. (Original) The control valve defined in Claim 7 wherein said armature moves a pin on which the valve portion is formed.

9. (Previously Presented) The control valve defined in Claim 8 wherein a lateral gap is formed by a tubular flux ring having an inner diameter that is greater than a major outer diameter of the armature.

10. (Previously Presented) The control valve defined in Claim 8 wherein the first lateral flux gap is formed external to the major outer diameter of the armature and the second lateral flux gap is internal to the major outer diameter of the armature.

11. (Cancelled)

12. (Not Entered)

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21. (Not Entered)

22. (Previously Presented) The control valve defined in Claim 6 further comprising an adapter wherein the closed tube structure is sealed with the adapter; and the armature cooperates with the adapter to allow flow through the valve.

23. (Previously Presented) The control valve defined in Claim 22 wherein the sleeve is made from a non-magnetic material.

24. (Previously Presented) The control valve defined in Claim 9 wherein the first lateral flux gap and the second lateral flux gap are located in a stepped relation to each other.

25. (Previously Presented) The control valve defined in Claim 24 wherein the first lateral flux gap and the second lateral flux gap are located at a circumferential radius that is less than that of the pole piece.

26. (Previously Presented) The control valve defined in Claim 6 wherein said pole piece is disposed within said sleeve.

27. (Previously Presented) A coil operated control valve comprising:

a valve seat;

a pole piece defining at least a first pole shoulder and a second pole shoulder that are both stationary relative to said valve seat;

an armature moving a valve portion relative to said valve seat to control flow of a fluid through said valve seat, said armature defining at least a first armature shoulder and a second armature shoulder, said first armature shoulder cooperating with said first pole shoulder to define a first lateral flux gap and said second armature shoulder cooperating with said second pole shoulder to define a second lateral flux gap; and

a flux ring mounted about a portion of said armature, a third lateral flux gap being defined between the portion of said flux ring disposed about said armature and the portion of said armature disposed in said flux ring.

28. (Previously Presented) The control valve defined in Claim 27 further comprising a pressure containing structure positioned between the flux ring and the armature.

29. (Previously Presented) The control valve defined in Claim 28 wherein the pressure containing structure is a non-magnetic sleeve; and  
the armature is positioned within the sleeve.

30. (Previously Presented) A coil operated control valve comprising:  
a valve seat;  
a pole piece defining at least a first pole shoulder and a second pole shoulder  
that are both stationary relative to said valve seat; and  
an armature moving a valve portion relative to said valve seat to control flow of  
a fluid through said valve seat, said armature defining at least a first armature shoulder  
and a second armature shoulder, said first armature shoulder cooperating with said  
first pole shoulder to define a first lateral flux gap and said second armature shoulder  
cooperating with said second pole shoulder to define a second lateral flux gap,  
wherein the first lateral flux gap is located adjacent to and in a stepped relationship  
with the second lateral flux gap.

31. (Previously Presented) The control valve defined in Claim 30 wherein the  
first lateral flux gap is formed external to a major outer diameter of the armature and  
the second lateral flux gap is formed internal to the major outer diameter of the  
armature.